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Meeting Minutes: VV&A TWG Workshop Number 10

Navy Modeling and Simulation Management Office (NAVMSMO) Verification, Validation, and Accreditation (VV&A) Program Technical Working Group (TWG) Workshop Number 10 was held at the NUWC IDC in Newport, R.I. on 20 Mar 2002. Enclosure 1 provides a complete attendance list.

The workshop agenda is presented in enclosure 2. The focus of Workshop 10 centered on VV&A activities within Naval Undersea Warfare Center, Newport, Lockheed Martin's TBMD efforts supporting PEO TSC, and an industry model based testing process. Workshop presentations highlighted policy, best practices guidance, and VV&A efforts within various DON programs. All available presentation slides have been included as separate attachments.

While some of the NUWC have been mentioned before, the workshop again established that key aspects for successful VV&A implementation include developing clear and detailed user M&S requirements, forming collaborative and open working relationships between sponsoring/accrediting and proponent/development organizations, and having a formal, centralized, and maintainable process for documenting and tracking VV&A activities and outcomes.

1.0 NUWC VV&A Efforts

NUWC is currently supporting the VIRGINIA (SSN774) Class Simulation/Stimulation (SIM/STIM) system and On Board Team Trainer (OBTT) support land-based testing conducted at the C^3I Command and Control System Module (CCSM) Off-Hull Assembly and Test Site (COATS). In conjunction with Commander Operational Test and Evaluation (COMOPTEVFOR) will utilize the SIM/STIM and OBTT to assess the potential operational effectiveness and potential operational suitability of the VIRGINIA (SSN 774) Class combat system.

Other efforts of NUWC are in the area of Target Threat Simulation in support of PMS 404. This supported efforts to determine effects of undersea weapons on both domestic and foreign built submarines. The simulation is being verified, validated, and accredited.

2.0 TBMD M&S V&V

The Navy Area Theater Ballistic Missile Defense (TBMD) Modeling and Simulation (M&S) Accreditation Review Panel (ARP) developed this Verification and Validation (V&V) Plan, with assistance from the M&S Proponent (MSP). The Multi-Target Effectiveness Determined Under Simulation for Aegis (MEDUSA) simulation is being verified, validated, and accredited for use to support the Navy Area TBMD Program.

The simulation will continue to be developed through TECHREP demo (scheduled in August, 2001) and Development Test/Operational Test (DT / OT) in 2002.

3.0 Telcordia Technologies Model Based Testing

Telecordia presented a brief on model based testing. In particular, the two themes of the brief addressed the following: Markov model; and the Combinatorial Design Method. The Chakov model is a used for usage modeling and the Combinatorial Design Method is to assess the experimented design parameters. The purpose of this presentation is to present a possible answer to "how much VV&A is enough?" and "what is the cost associated to VV&A?". These are common questions that were raised at all VV&A TWGs. Although the statistical method of determining the cost is new to VV&A, this may be a tool that can be employed to answer futuristic development of systems.

4.0 NAVMSMO VV&A Turbo Tool

The final presentation of the workshop was a demonstration of the NAVMSMO VV&A Turbo Tool that is being prepared for beta testing. The beta test will be available in the near term. The Tool is designed to assist the VV&A Agents to develop documents required for their program. In process of documenting, it guides the users in a step-by-step process of implementing the VV&A.

5.0 Other Activities

Following the workshop, both attendees and participants toured the Weapons Analysis Facility and the Human Interface laboratory facilities.

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Attachment 1: NAVMSMO VV&A TWG Workshop Number 10 Attendance Roster

Last Name	First Name	Company	Business Phone	E Mail
Park	Jennifer	NAVMSMO	703 601 1466	Park.Jennifer@hq.nvy.mil
Stutzman	Marcy	Northrop Grumman	301 317 9698	mstutzman@northropgrumman.com
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Wernicki	Steven	NUWC		wernickis@npt.navy.mil

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Attachment 2: NAVMSMO VV&A TWG Workshop Number 10 Agenda

March 20, 2002

Time	Topic	Speaker
0730-0800	Check-In/Coffee	
0800-0810	Administrative Remarks/Welcome/Introduction	Lynee Murray (NUWC) Jennifer Park
0810-0900	PMS 404 Target Threat Simulation Validation	Paul Drake (NUWC)
0900-1000	System Simulation Design and Development	Darryl Hummel (Lockheed Martin)
1000-1015	Statistical Processes for Measurement Errors	Lynee Murray (NUWC)
1015-1030	Break	
1030-1130	Software Statistical Methods for Defense Systems	Sid Dalal (Telcordia technologies)
1145-1300	Lunch	
1300-1345	Turbo Tool Overview/Beta test	Kevin Charlow (SPAWAR)

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1345-1415	V&V SIMS/STIM Virginia Class Submarine	Steve Wernicki (NUWC)
1415-1445	Discuss ongoing VV&A activities/Discuss VV&A documentation	Jennifer Park (NAVMSMO)
1445-1500	Action Items and Wrap-up	Jennifer Park (NAVMSMO)
1500	Tour Of Human Interface Laboratory	Lynee Murray (NUWC)